THE SPECTATOR

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IT is commonly remarked that the presidential election year is an off year for life assurance. The experience of the most enterprising companies does not confirm this opinion. Indeed, one of the prominent companies sent out a special circular recently to its agents, urging that the assembling of men on the streets and in political gatherings gave greater opportunity for the life agent to catch their attention and secure assurance on their lives. Stump oratory has the effect of bringing people together, and often on such occasions men may be met whom agents would not ordinarily see once a year. Many of these are ripe for assurance, and should be picked before they fall into the baskets of "the other fellows."

THE programme outlined by us last week regarding P. B. Armstrong and the Mutual Fire Insurance Company and the Fire Association, was carried out at the meetings of the directors of those companies on Thursday and Friday. Mr. Armstrong will be found in future at his old desk in the office of the Mutual, and will respond with alacrity when addressed as president of that company. The business of the Fire Association, of which he is also president, will be transacted in the offices of the Mutual. O. R. Myers, who has been chosen vice-president of both companies, is a bright, intelligent young business man, who has shown great energy and capacity in other enterprises, and will be, no doubt, an able lieutenant to the captain of the allied forces.

THE fact that John Wanamaker, the well-known millionaire merchant of Philadelphia, has recently increased the assurance on his life to $1,000,000 has been widely commented on. John B. Stetson, Hamilton Disston and Dr. Hostetter have nearly as much upon their lives. A little pamphlet issued by THE SPECTATOR Company, called "Prominent Patrons of Life Insurance," gives the names of several hundred persons whose lives are assured in sums ranging from $25,000 to $500,000, and photographic copies of autograph letters written by a number of them expressing their appreciation of the value of life assurance. This pamphlet is handsomely printed, and makes a taking canvassing document. The fact that so many wealthy persons are assuring their lives in large amounts is evidence that they regard this form of investment as the most profitable manner of putting away a portion of their surplus cash. Life companies that make a business of seeking out profitable channels in which to invest the money confided to them by their patrons are in a position to make better returns to them than they can realize by investing in the average securities that are floating in the market. Another great advantage lies in the fact that while market securities are fluctuating and liable to bring a loss to their purchasers, life insurance has a fixed value, the dividends are paid with regularity, and the principal is absolutely secure. Aside from the assurance, the purchase of a life policy is a paying investment.

THERE is an almost complete dearth of news in fire underwriting circles at present. Since the formal suspension of the Tariff Association even the most sanguine workers in the cause of reform seem to have become discouraged, and there has been no renewal of efforts to form a new compact or "combine" of any sort. A proposition to have the work of tariff rating continued, so that a completed schedule of risks may be ready whenever a new organization pops up, is sporadically discussed now and then, as is also the proposition to organize an inspection bureau under the auspices of the New York Association, but interest in all attempts to organize fire underwriters for reform work on general principles has died out completely. Nothing short of another Chicago conflagration will serve to arouse the underwriters from their lethargy, and induce them to stand shoulder to shoulder once more to carry on the good fight against the common enemy. Each manager of a company is content at present to paddle his own canoe without the assistance of others, and to wrangle with the brokers as to rates to his heart's content. The general tendency, however, is to maintain tariff rates as nearly as possible without losing the business, but that manager has an exceptionally stiff backbone who can, with unruffled countenance and a smile on his lips, witness the departure from his office of a broker with a premium in his pocket, however inadequate it may be, because of a difference of opinion as to what the rate on the risk should be. As a rule, the broker fixes the rate and the company accepts it and pays the commission of twenty-five or thirty per cent with thanks. The brokers are on top just now, and are executing a lively jig upon the corporosities of the companies. A good rousing conflagration or a series of big fires would be apt to convert their jig into a dance of death, for it is on the cards that at the next turn of the wheel the brokers will be crushed and mangled to a frightful extent. Their innings are drawing to a close, and when the companies go to the bat look out for some "hot 'uns," regular "daisy cutters," that will smash the broker's record. As it is popularly understood that a calm precedes a storm, perhaps the present stagnation in fire underwriting circles presages a revolution and a settling up of old scores. So mote it be.

THE importance in a community of any considerable size and wealth of a properly equipped salvage corps or fire patrol, charged with the protection of the contents of burning buildings, has seldom been more strikingly shown than at the recent fire in The Century building on Union square, New York. Owing to the nature of the contents of the building and the fact that the fire, which broke out on an upper floor, had to be fought in the upper portion of the structure, the damage by water far exceeded that by fire. This water damage would, however, have been infinitely greater had it not been for the prompt and efficient work of the fire patrol, which, by spreading its covers over the contents of the lower stories, saved the insurance men an amount estimated by one of their number

at about $150,000. We have often expressed the opinion, and now repeat it, that while this service is now supported by the insurance companies, it would be public policy to establish similar corps in conjunction with the fire departments in cities and towns of any considerable size or wealth, to be under the chief engineer, and maintained by the municipality. The record in different cities shows that a large proportion of the property saved from water damage by means of this service in the past has been uninsured, and that, while water is used to put out fire, protection against the extinguishing medium is very nearly as needful as against the fell consumer itself. It has been proposed by some underwriters to limit the duties of the salvage corps to the protection of insured property, but we doubt if this will ever be found practicable, and really cannot see why the uninsured public should not pay for the maintenance of the salvage corps as for that of the fire and police departments. What a howl of derision would arise were someone to suggest that the life insurance companies should be compelled to pay the expenses of the life-saving crews stationed along the coast, and of the pompier corps of our fire departments; and yet this would not be one whit more absurd than the present way of maintaining the fire patrols.

THE question of enforcing the burial of the electric wires in New York city is now assuming so extremely complicated a shape, that it will soon puzzle a Philadelphia lawyer to understand just what the position is. Just at present it seems to be this: The subways for the reception of the wires have been completed, as designed, in several miles of different streets, and a considerable number of telegraph and telephone wires have been laid in them. The United States Illuminating Company, which operates a system of arc lighting on some of these streets, and whose wires are struug on poles overhead, has declined to remove its poles and make use of the conduits, on the ground that they are improperly constructed for its purposes, and that the company might as well go out of business at once as attempt to do so. Upon being told this, the Board of Electrical Control revoked the company's license, ordered it to remove its poles and wires, and called upon the police department to arrest anyone found engaged in maintaining the lines in any way. The company simply shut off its lights and waited. Then the board requested the Commissioner of Public Works, General Newton, to have the poles and wires cleared away, but he replied that he had no power to do so without an order from Mayor Hewitt and the doughty Mayor had already said emphatically that it was left optional with him by law, whether to order this or not, and he wouldn't do it, as he did not consider the conduit system far enough advanced to warrant an experiment which might deprive a great part of the city of light for an indefinite time. Meanwhile, the corporation counsel began a civil suit to have the illuminating company's charter vacated, as it wouldn't place its wires in the conduits, and asked the aid of the Board of Electrical Control in pressing the case to a conclusion; this body, however, having already instituted criminal proceedings against the company, has declined to take part with the local authorities, and will go ahead on its own hook. In the letter conveying this decision to the corporation counsel, the board says in effect that the city authorities could and should have enforced the statutes, compelling obedience to the requirements of the board; that by not doing so they have delayed the work of the board about a year, and that the civil suit is unnecessary and calculated to cause still more delay. The Board of Electrical Control is plainly in right-down fighting trim at last, and it is to be trusted in the interests of the public that the fight may be short and decisive. If, as the companies claim, the existing subways are not fit for the electric light wires, they should be made so; on the other hand, if they are properly constructed the companies should be promptly compelled to make use of them. To-morrow the president of the United States Illuminating Company is to appear before the Attorney General at Albany to show cause why his license should not be revoked, and the expert testimony which will be given, both for and against the conduits, will doubtless prove highly interesting.

THERE has been great complaint of late of a scarcity of water in Brooklyn, and apprehension has been felt lest a big fire should occur and find the fire department crippled for want of water. So urgent was the matter that the Mayor called a special meeting of the council to consider what is necessary to be done to supply the deficiency. Brooklyn is suffering from over-development; the city has grown so rapily of late years and extended her area so much that the sources of water supply heretofore utilized are wholly inadequate to supply the demand for water. The whole of Long Island has shared in this growth, and the little ponds that heretofore supplied the city are well nigh exhausted. Driven wells have contributed largely to making good the deficiency for a number of years past, and the solution of the problem now presented in Brooklyn will possibly resolve itself into putting down more driven wells and increasing the number of stations along the line of the aqueduct. There is some objection made to the driven wells by farmers in their vicinity who maintain that they draw upon their private wells, but tests made to determine whether this was true or not seem to demonstrate that there is no foundation for the statement. Their wells are affected by the rainfall, and are high or low according to the amount of rain, regardless of the continuous pumping at the driven well stations. To obtain an adequate water supply for Brooklyn by any other means would necessitate going a long distance for it and involve an enormous expenditure of money. With New York's experience with contractors and "jobbers" before their eyes, the citizens of Brooklyn naturally hesitate to commit themselves to an elaborate water supply system which would give politicians and "jobbers" an opportunity to plunder them. But water they must have at any cost. With the ocean on one side and the East river on the other, it would not be a difficult matter to introduce into Brooklyn an independent salt water system, to supplement the present system, providing an unlimited amount of water for manufacturing and fire purposes, and also all that supply that is called waste, so that the fresh water could be limited to actual domestic uses. By doing this, the present fresh water supply would probably be found sufficient for a long time to come.

IN another column we republish an article from The Weekly Underwriter relative to the pamphlet entitled "Premiums and Reserves," written by Sheppard Homans, consulting actuary, and published by THE SPECTATOR Company. The Underwriter very truly says that the purpose of the author of the pamphlet is to dispel the fog with which actuaries have surrounded the business of life assurance, and to bring the subject within the comprehension of every man who has an average knowledge of mathematics. This little work is designed more especially for the use of life assurance agents, and its careful perusal is calculated to give them an understanding of the functions of the life assurance premium so that they

can explain the matter intelligently to intending assurers. Mr. Homans' work in this instance is in the line of simplicity, and it embraces facts that an agent might spend a year in the study of actuarial volumes without attaining. We anticipate that the pamphlet will be criticised by the non-progressive life men who work in ruts, and desire to keep everybody in ignorance regarding the principles of life assurance as far as possible, but the progressive spirit of the age demands light upon the subject, and will not consent to be befogged if it is possible to avoid it. The most successful agents are those who can explain thoroughly and satisfactorily the contract they solicit persons to enter into, and when they have at hand the means of imparting such information, they are thoroughly equipped, and can do their work with a great saving of time to themselves and their customers. One of the greatest obstacles agents have to encounter is found in the statement they so often have made to them: "Oh! I haven't time to look into this subject now," and men who really want and need life assurance are deterred from taking it by the formidable array of mathematical problems and elaborate explanations the agent presents them. Whatever will tend to simplify the subject will lessen the work of the agent, and bring him into easier and closer communion with those with whom he seeks to do business.

*DEFINITIVE ANALYSIS OF LIFE ASSURANCE RETURNS.**

TWO years ago we printed in THE SPECTATOR a series of tables, compiled by Benj. F. Brown of Boston, which were entitled "Comparative and Relative Analysis of Life Insurance Reports." These tables occupied twelve pages of THE SPECTATOR, and students of life assurance pronounced them to be the most complete and thorough analysis of the annual reports made by the life companies that had ever been undertaken by any statistician. The demand for these tables was so great at the time that we were under the necessity of reprinting them in pamphlet form for the more convenient use of agents. That analysis embraced a period of five years only.

Mr. Brown has just completed a more extensive work in the same direction, and has furnished us a series of tables entitled: "Definitive Analysis of Life Assurance Returns—1881 to 1887 inclusive; A Compendium and Digest of the Figures of Twenty-six Companies. Compiled from the Official Massachusetts Reports." These tables are printed in THE INSURANCE YEAR BOOK for 1888–1889, which is just out. They occupy forty-four pages of that volume, which fact will convey some idea of the magnitude of the compilation and the broad and comprehensive scope of the author's work. In explanation of them we quote as follows from Mr. Brown's introduction:

> The compilation of these tables from the inception of the work down to the last figure of the final column has been essentially *labor amoris* to the author, inasmuch as it is the outcome, pure and simple, of a strong natural love for figures *minus* the incentive of any prospective pecuniary return that would even remotely compensate for the time and labor expended owing to the obviously limited field open to this particular class of literature. The idea of the work grew out of the collation by the author of a few "bottom facts" from the official record for his own especial use and behoof. Becoming interested he pursued his investigation beyond the limits originally intended, and, little by little, as the problem widened and new lights appeared, became absorbed in the fascination of the pursuit, persevering to the end, at no small sacrifice of personal interest, with the result as set forth in these pages. Such, in brief, is the story of the origin and "reason for being" of this work, given for what it may be worth.
>
> The results as they appear are simply a digest of the sworn returns of the companies as recorded in the official Massachusetts Reports, of which standard authority, indeed, the work in its entirety is *the essential epitome and reflex*. In the interests of no company and opposed to none, in its pages each company stands squarely upon its individual (and official) record, therefore, needless to say, with "nothing extenuate nor aught set down in malice." It only remains to add that no pains or efforts have been spared by the author to make the work accurate and reliable in its every detail and to point out further that, by reason of the practical illustration it affords of the working of the active governing principles of life assurance, it can hardly fail of being interesting and instructive generally and to the student and beginner especially.
>
> The general plan and scope of this work may be briefly stated thus: Table A exhibits the individual companies in their business, financial and progressive, table B in their economical, aspects. Tables C and D give the figures of the combined companies in aggregate and grand aggregate, these in their turn being made use of in obtaining a series of "standard" ratios, with which, in table E, the definitive ratios of the individual companies are placed in comparison, affording a final exhibit of peculiar interest. The record commences with the year 1881 for well-considered reasons: First, with the obvious purpose of covering a term of years sufficient for obtaining the best average results, and second, for the very important reason that the year in question marks at once the termination of a critical period and the commencement of a new epoch in the history of American life assurance, in this wise: In 1870 the volume of existing assurance, swelled to abnormal proportions as a consequence of the "flush" times during and immediately succeeding the war, had reached the flood-mark of 1982 millions in round figures. From this point reaction set in and, being given fresh impetus a little later by the great financial panic, continued almost without break or intermission through the entire decade, the receding tide reaching its lowest mark in 1880 with the total at 1418 millions. With the termination of that year, however, commenced a new era and, starting from a solid basis, began that onward and upward progress which has since known no check (though not until '86 did the total reach that of 1870), resulting by the end of '87 in the magnicent aggregate of 2414 millions in force. It is only fair to add, however, that the greater proportion of this enormous gain of nearly 1000 millions appears in coincidence with, if not as a result of, the adoption of new methods on the part of certain companies. This brief retrospect sufficiently emphasizes the special interest attaching to the period covered by the tables.

In the tables A and B the annual reports of each of the twenty-six companies reporting to the Massachusetts department are taken up in detail for the last seven years, and the relations of the several items to each other analytically examined. From this elaboration of details, tables C, D and E are evolved, the first two presenting aggregate ratios and averages, while table E gives the ratios for individual companies. We present herewith tables C and D, giving the aggregate deductions, from which readers will obtain an idea of the extent of the work as comprised in the details given for individual companies.

In presenting this analysis of life assurance in THE YEAR BOOK and the accompanying tables in THE SPECTATOR, we take the liberty of supplementing the author's statement that the work has been done from an entirely unprejudiced standpoint so far as he, as author, and THE SPECTATOR Company, as publishers, are concerned, with our own statement to the same effect. The figures are those of the companies themselves, and are to be found in the Massachusetts reports; the analysis is the work of Mr. Brown; the putting of his work into printed form is ours. A careful study of the tables reveals the fact that in some particulars one company ranks higher than others, while in other features it ranks below them. Rejecting any attempt to "rank" the companies

* By B. F. Brown. Copyright, 1888.

TABLE C.—BUSINESS AND FINANCIAL EXHIBIT—GRAND TOTALS AND "STANDARD" RATIOS, 26 COMPANIES, 1881–87 INCLUSIVE.

YEAR ENDING DECEMBER 31.	NEW AND OUTSTANDING ASSURANCE.*					NET (INVESTED) ASSETS AND RESERVE. GROSS ASSETS, LIABILITIES AND SURPLUS.		
	New Assurance Issued and Paid for.	Total Outstanding.	Net Gain of Assurance.	Relative Volume of New Business.	Per Cent of Annual Gain.	Cash Guarantee Capital.	Net Interest-Bearing Assets.	Net Reserve, Mass. Standard.
	$	$	$	%	%	$	$	$
1887	435,701,251	2,413,998,133	245,962,088	20.1	11.3	4,215,500	548,665,463	503,592,216
1886	369,803,990	2,168 036,045	197,733,098	18.8	10.0	3,965,500	512,285,312	469,961,142
1885	315,609,956	1,970,302,948	149,217,556	17 3	8.2	3,965,500	478,441,672	440,592,857
1884	265,403 423	1,821,085,392	105,216,116	15.5	6.1	3 965,500	453,816,127	417,776,282
1883	260,512,047	1,715,869 276	125 675,344	16 4	7.9	3,965,500	433 782,195	399,003,981
1882	221,654,187	1,590,193,032	97 556,707	14 2	6 5	3,209,087	413,078,793	379,364 536
1881	190,081,568	1,492,637,225	77,321,313	13 4	5.5	2,625,500	393 840,059	361,786,134
	2,058,766,422	.....	998,882,222	16.5	7.9	.....	.....	.....

YEAR ENDING DECEMBER 31.	NET (INVESTED) ASSETS AND RESERVE. GROSS ASSETS, LIABILITIES AND SURPLUS.						SEVEN YEARS GROWTH.		
							Increase in		
	Interest-bearing Assets to each $100 of Reserve.	Reserve to each $1000 of Assurance.	Gross Admitted Assets.	Gross Liabilities.	Surplus to Policyholders.	Gross Assets to each $100 of Liability.	Assurance in Force.	Income.	Assets.
	$	$	$	$	$	$	%	%	%
1887	† 109 00	207.00	577,414,606	507,235,946	a 70,178,660	† 113 84	‡ 70.6	‡ 68.3	‡ § 43.3
1886	109.00	215.00	544.113.339	476,014.572	68,098,767	114.30			
1885	108.60	222.00	507,588,330	446,563.502	61,024,828	113.67			
1884	108.60	227.00	475,539,765	424,017,429	51,522,336	112.15			
1883	108 70	229 00	456,037,492	405 119,466	b 50,918,026	112 57			
1882	108.90	236.00	433.906,737	385,510,667	c 48,396,070	112.55			
1881	108 80	241 00	414,997,127	368,220,292	46,776,835	112.70			
	.....	.....	.....	.....	.....	.....			

* Exclusive of industrial business. † Includes increase of capital. ‡ Apply to "regular" business, twenty-four companies only, the figures of the John Hancock and Metropolitan being mixed with industrial business. § Exclusive of increase of capital. *a*, *b* and *c* include increase of capital $250,000, $756,413 and $533,587 respectively.

TABLE D.—REVENUE AND ITS APPORTIONMENT—GRAND TOTALS AND "STANDARD" RATIOS, 26 COMPANIES, 1881–87 INCLUSIVE.

YEAR ENDING DECEMBER 31.	INCOME.					Interest Income to Mean Net Assets.	Interest Income to Net Premium Reserve.	OUTGO (COST-FACTORS ONLY).			
	Premium Receipts.	Average Premium (Assurance and Endowment).	Interest, Rents, Profits, etc.	Total Income.	Per $1000 Assurance and Endowment.			Paid Death Claims.	Per $1000 Assured.	Expenses and Taxes.	Per $1000 Assured.
	$	$	$	$	$	%	%	$	$	$	$
1887	98,539,554	38.10	29,181,198	127,720,752	50.00	5 35	5.57	34.479 482	13.50	23,779,702	8.60
1886	86,926,666	37.70	27,369,005	114,295,671	50.10	5 28	5.51	29 565,862	13.00	20,094,703	8.20
1885	76,701,106	37.00	26,114,390	102,815,496	49.90	5.37	5.62	28,812,819	14.10	17,420,031	7.80
1884	70,391,991	36.60	24,108.351	94 500,342	49 60	5.33	5.59	24 987,869	13.20	15,618,831	7.50
1883	65,852,116	36.30	24,381,871	90,233,987	50 20	5.38	5.65	24,994.688	14.30	14,371,843	7.40
1882	59,111,312	35.60	23,703,619	82,814,931	50 20	5.47	5.75	22,129,476	13 70	12,715,955	7.30
1881	54.598,468	35.10	22,471,492	77,066,960	50.00	5.62	5.94	21,886,949	14.60	11,906,188	7.30
	512,118,213	36.60	177,329,926	689,448,139	50.00	5.40	5 66	186,857,085	13.80	115,907,253	7.70

YEAR ENDING DECEMBER 31.	Combined Outgo or Net Cost of Assurance per $1000.	Matured Endowments, Cash Surrender Values, and Reserve.	SURPLUS REVENUE.					COMPARATIVE EXPENSE RATIOS.		Death Claims and Expenses to Total Assurance.
			Total Divisible Surplus, Mass. Standard.	Dividends Paid to Policyholders.	Undivided Balance Accruing to Current Surplus.	Surplus per $1000 Assured.	Surplus to Prem. Income.	Expenses and Taxes to Premium Income.	Expenses and Taxes to New Business.	
	$	$	$	$	$	$	%	%	%	%
1887	22.10	21.20	16,517,298	14 687,405	1,829,893	6.70	17.6	22.6	4.82	2.21
1886	21.20	19 60	20,129,265	13,055,326	7,073,939	9.30	24.6	21.8	4.90	2.12
1885	21.90	16.50	22,297,467	12,794,975	9,502,492	11.50	31.0	21.0	4.97	2.19
1884	20.70	21.40	13,472,496	12,868,186	604.310	7.50	20.4	20.5	5.24	2 07
1883	21.70	19 60	14,999,037	13,233,494	1,765,543	8.90	24.6	20.4	4.83	2.17
1882	21.00	20.10	14,398,012	13,362,364	1,035,648	9.10	25.5	20.5	5 18	2.10
1881	21.90	18.80	13,737,619	12,398,248	1,339,371	9.30	26.5	20.8	5.71	2.19
	21.50	19.60	115,551,194	92,399,998	23,151,196	8.90	24.3	21.1	5 09	2.15

upon any one of the numerous bases that readily suggest themselves, we have simply placed them in alphabetical order, thus avoiding giving any undue prominence, seemingly or otherwise, to any company. Without further comment, we present the results of months of careful study and laborious compilation, leaving to professional "statistic twisters" the work of demonstrating from these impartial exhibits that "black is white and white is black."

CONTRIBUTED PAPER.

LAW OF MORTALITY AND THE THIRTY AMERICAN COMPANIES.

By Prof. C. F. McCoy.

The Philosophical Transactions of 1820 contained an article by Benjamin Gompertz, in which he showed that in the later periods of life the rates of mortality increase very nearly in geometrical progression. Five years afterwards, another communication from the same source suggested that death may be the result of two causes, one representing irresistible diseases and accidents which affect all persons and all ages alike, and the other producing the geometrical progression that he had announced in 1820. He gave, as an algebraic expression for the first of these two causes, the constant a, and for the second bc^x.

I am not aware of any proof of this suggestion by an appeal to experience. When Mr. Walford, the author of The Encyclopædia of Insurance, returned to England a few years since, from a visit to this country, he stated, that the publication of the experience of the American companies would furnish ample proof of this law. But I have found, after careful examination, no such proof by any reference to experience; and it has occurred to me recently to examine the facts and learn whether they furnish this evidence.

The law is generally referred to as Makeham's. But as far as I know, the only connection he has had with the law is that he showed that that part of the law which Gompertz had proved to be true in 1820 applied to the deaths from pneumonia; but for the unproved part of the suggestion of Gompertz he furnished no evidence. Nor does Mr. Meach furnish any in his able essays or his immense collection of facts and tables. Nor is any to be found, as far as I have seen, in the "Tables of the Institute" of British Actuaries, or in the many volumes of their "Journal." Mr. Meach believes in the law and has constructed a table of mortality from the age of ten to that of one hundred by means of this law, but if he has made a comparison of this table with the experience he has published, it has entirely escaped me.

The facts furnished to Mr. Meach by the request of the American Chamber of Life Insurance, were presented on cards giving the particulars of each separate risk that had been taken by thirty American life companies. These were nearly of the same form, but far more numerous than those used for constructing the New Actuaries' Table of the British Institute. Both sets of cards were treated in exactly the same manner. The numbers exposed to the risk of death for one year at each age were found by the same formula, and all the facts needed for the employment of this formula are published in detail, the first in this country and the second in Great Britain, so that everyone can see how the results were obtained. When these exposures for a year at every age were found a summary of all was made; and that for the American males is to be found on page 74 of the American publication, while that for the British males is on page 244 of the "Mortality Experience" published by the British Institute. From this last, the table on page 273 was obtained, from which the New Actuaries' Table was constructed by Mr. Woolhouse in the manner described in the "Tables of the Institute." A similar treatment of the table on page 74 of the American publication will give a table for the American observations corresponding to the New Actuaries' Table. From the summary on page 74, I have obtained the annual mortality rates for each age, which will be found in the first column in the table published herewith, which corresponds exactly with the first column on page 273 of the "Mortality Experience" published by the Institute.

Now, by the law of Gompertz every one of these rates furnishes an equation between the constants a, b and c in the formula for the rate of mortality by making x equal to the age, so that there would be eighty-six equations for the observations of the whole summary from the age of ten to ninety-five; that for the age twenty being $a + bc^{20} = .00842$, and for fifty $a + bc^{50} = .01255$, and so on for all the other ages.

A slight examination of these equations will show that the American observations, although they are four or five times more numerous than those of the twenty British offices, are entirely insufficient to give true and exact values to the constants a, b and c. Nor is it probable that the equations would accord exactly with one another, if the observations were a hundred times more numerous than they now are, nor if they comprised the experience of all the insurance companies of the world, or the experience of the whole population of Europe and America for the entire period from the beginning of the nineteenth century to the present time. But although exact mathematical results cannot be obtained, approximations of the greatest practical importance are within reach, as I will now explain.

It is well known that the mortality rates in infancy are very high, especially in the first quarter of the first year of life. This decreases rapidly until the age of ten or twelve, when a minimum occurs. By combining the experience of the thirty American companies with that of the twenty British offices, and that of the American companies that have published their experience, both male and female, I have found that they show a minimum at the age of eleven, and for that reason I begin the examination of the thirty American companies at that age. The observations from eleven to twenty are few, and not much confidence can be placed in the results; but the simple method of averages indicate that the advance is rapid. If the average of three rates be taken, the values from twelve to twenty inclusive would be .00184, .00321, .00392, .00362, .00442, .00557, .00659, .00723 and .00787. By employing the method used by Mr. Woolhouse, the values given in the second column of the table printed at the end of this article, from eleven to twenty-six, were obtained. These show a maximum at the age of twenty-one, and a continued decrease after that age until the age of twenty-six. This maximum will be found in the Hm. and Hm.(^{5}) tables of the twenty British offices, and in the experience of the Mutual Life of New York, the Mutual Benefit of New Jersey, the Connecticut Mutual and the Provident of Philadelphia. The uniform result of all these separate companies makes the presumption very strong that this maximum is a law of nature. If a physical cause be sought for this apparent anomaly, it may be found in the development of the reproductive system, which is a severe strain on the vital energies, both in plants and animals. It is not only the cause of death by its own disturbing influence, but produces still more destructive effects by permitting other natural tendencies to develop themselves and bring about disease and death. These influences produce more and more injury, until they reach their maximum at the age of twenty or twenty one, after which period their effects grow less and less until, at the age of twenty-six or twenty-seven, they cease to show themselves.

During this period of youth and early manhood the progress of the mortality rates is entirely different from that which is indicated by the law of Gompertz. This law requires a slow and steady increase for the whole of this period of fifteen or sixteen years, while experience seems to show, first, a rapid increase, then a maximum, then a slow decrease, which continues for six or seven years before the minimum is reached, and the increase for the future period of life begins. If the law of Gompertz applies during the seventy or seventy-five years which succeed the age of minimum mortality, it will be an important element in determining the rates of mortality for a long period of time, and of great practical utility in the business of life insurance.

It is, therefore, my object to inquire how nearly this law accords with the observations of the thirty American companies. Are its rates more worthy of confidence than the observed rates? Are they more trustworthy than those given by the method of Mr. Woolhouse, which was used in constructing the New Actuaries' Table?

The observations of the thirty companies extend to the age of ninety-five. From twenty-six to ninety-five the observed rates of mortality furnish, therefore, seventy equations of the form $a+bc^x$, in which x has successively the values 26, 27, 28, etc. Any three of these would determine a, b and c, but, as the observed rates are irregular and incorrect, it is important to use the seventy equations so as to obtain the best or most

probable values of these three constants. To do this I have first reduced the seventy equations to fourteen by adding together each successive five. These sums of the five values will be of the form $5a+bc^m(1+c+c^2+c^3+c^4)$, where m has successively fourteen values, 26, 31, 36, 41, etc. The fourteen values of the second members of these equations are given in the first column of the table below. The differences of any of these values will give new equations, which will not contain the constant a, and the quotients of the remainders will contain only powers of the constant c.

By deducting each of the first eight of these sums of five rates from the sixth which follows it, and each of the first seven from the seventh which follows it, the fifteen remainders in the second column in the following table were obtained. By dividing each of the first five of these eight remainders into the third which follows it, the five values of c^{15} will be obtained, which are to be found in the fourth column; and by dividing each of the first four of the seven remainders into the third which follows it, four other values of c^{15} will be obtained. The sum of these nine values of c^{15} is 32.78, and their average is therefore 3.642. The logarithm of this is 0.5613, and the fifteenth of this gives .03742 for the logarithm of c, and 1.0900 for c. If, instead of dividing each of these remainders into the third which follows it, the division be made into the second, the eleven quotients in the third column will be obtained, which equal c^{10}. Their sum is 26.69, and their average 2.426. So that log. c is .03849, and $c=1.0926$. If each of these remainders be divided into the first which follows it, the quotients in the fourth column will be obtained, and will equal c^5. Their sum is 20.46 and their average is 1.564. The logarithm of this is .1942, which gives 1.0935 for c. The sum of these three values of c is 3.276, and their average 1.092, whose log. is .038, which is the value of c that will be used for the determination of the other two constants, a and b.

Ages.	Total Rates.	Diffs.	c 15	c 10	c 5	b
26-30	.03348	.06941	.363	2.53	1.58	.000929
31-35	3583	.10941	.381	2.30	1.60	945
36-40	4074	.17534	.308	2.32	1.44	978
41-45	4786	.25185	.382	2.14	1.65	906
46-50	5741	.41654	.385	2.31	1.30	968
51-55	7445	.54010	.....	2.97	1.78	811
56-60	.10289	.96163	.....	.....	1 67	932
61-65	.14524	1.00476	.....	.....	.....	1004
66-70	.21608	.11176	.381	2.32	.....	940
71-75	.29971	.18025	.309	2.37	1.61	978
76-80	.47395	.25897	.....	2.15	1.44	907
81-85	.61455	.42609	.382	2.32	1.64	961
86-90	1.06452	.55714	.387	2.96	1.31	814
91-95	1.75000	.99007	.....	.....	1.78	934
	.....	1.64711	.....	.....	1.66	1003
Sum	.....	.....	3278	26.69	2046	.014013
Average	.....	.....	3.642	2.426	1.564	.0009342
Log	.....	.....	5613	.3849	.1942	−4 970
Log c	.....	.....	0.3742	.03849	.03884	.....
c	.....	.....	1.0900	1.0926	1.0935	.....

By substituting the average of this value of c whose log ^{m} is .038 in each of the fifteen equations, the fifteen values of b in the sixth column above were obtained, the logarithm of whose average is −4.970. To find a, the whole seventy equations were employed. The deaths which the term bc^x would produce from 26 to 95 were found by multiplying it on the numbers exposed to the risk of death, and are given in column third of the following table, amounting in all to 20352.5. The deaths which are opposite each age before 27, obtained by means of the rates determined by the method of Mr. Woolhouse, amount to 2296. Their sum, which is 22648.5, being taken from 44482, the whole number of deaths from 11 to 95 leaves 21833.5 which must be caused by the term a. As this term must be multiplied on the whole number of the living after the age of 26 to produce these deaths, a will equal the quotient of 21833.5 by 3992586, the number exposed to the risk of death after 26. This gives .005468 for the value of a.

The three constants a, b and c, being thus determined, the rates of mortality for each age, and the deaths these would produce from 26 to 95, and the sum of these deaths from the age of eleven to each succeeding age, and the deviations of these from the corresponding sum of the observed deaths were all found and are inserted in the table at the end of this article. The deviations are everywhere very small, and the results most satisfactory. They show beyond all question of doubt that the law of Gompertz governs the mortality of the thirty American companies for the whole period from the age of 26 to 95. The sum of the calculated deaths agrees with those observed, exactly, at four places and in the total number, being slightly above and slightly below at other ages, but never deviating as much as one-fifth of the number of deaths corresponding to the age. At thirty-nine ages the difference is positive, at twenty-five it is negative, and at five it is zero.

The accordance with the law of Gompertz is still further manifested by the agreement between the thirty-three values of c, and the fifteen values of b, which were obtained for so many ages in all parts of the table.

The results differ very little from the experience of the Mutual Life of New York. The average for the six decades, beginning at 27 and ending at 86 being for the two as follows:

Companies.	First Decade.	Second Decade	Third Decade.	Fourth Decade.	Fifth Decade.	Sixth Decade.
New York Mutual	.00664	.00809	.01263	.02633	.06594	.10161
Thirty American.....	.00701	.00918	.01385	.02694	.05535	.11853

As Professor Bartlett did not regard the observations of the Mutual Life of any practical value for the purpose of determining the mortality rates to be expected by American life insurance companies, because of the great preponderance of lives in the early years of insurance; for the same reason the observations and the tables of the thirty American companies, and also of all other publications made by our American companies are entirely useless for determining the mortality to be expected in the future. All are of more or less assistance in answering some questions that may be raised for discussion, on which they throw light; but they are entirely useless for all the practical business of life insurance.

The very close agreement between the sum of the deaths, calculated by the laws of Gompertz, and the actual deaths, is a complete proof that, for these observations, this law governs the mortality rates for the whole period after the age of twenty-six, and that the results that it gives for the mortality at every age is more to be trusted than the observed rates themselves. The observed rates rise and fall with great irregularity, while the calculated rates steadily advance, giving always very nearly the identical number of deaths that were observed; and there can be no doubt that the regular are more trustworthy than the irregular.

If now the rates given by the law of Gompertz be compared with those obtained by the method of Mr. Woolhouse, the following will be the two results for the ten years after twenty-six:

Ages.....	27	28	29	30	31	32	33	34	35	36
Woolhouse.....	.00670	689	675	676	679	691	709	721	740	768
Gompertz.....	.00646	654	664	675	687	700	714	729	745	764

By comparing the progress of the rates given by the two methods, it will be seen that the former move upwards and downwards by irregular intervals, while the latter have a steady and regular increase for the whole period, and are, therefore, much more probably in accordance with nature. If the sum of the deaths given by the two be compared, it will be found that the former deviates from the observed by a very large number, increasing continually for seven or eight years, while the latter are sometimes above and sometimes below the actual sum; showing that the method of Gompertz is greatly to be preferred to that of Mr. Woolhouse as far as these ten ages are concerned. In like manner, also at other ages.

The rates I have obtained differ very considerably from those given by Mr. Meach on page 2, being fully ten per cent lower. This is due, I suppose, to his increasing the rates in his "final series" so that they exceed the observed rates by this percentage.

Mortality Table for the Thirty American Companies.

Ages.	Obsd. Rates.	Calcd. Rates.	Deaths by bc^x	Calcd. Deaths.	Sums of Cald. Ds.	Diffs. from obsd.
11	0	.00388	.....	1	1	1+
12	0	.00416	.....	1	2	2+
13	.00553	.00447	.....	2	4	2+
14	.00410	.00482	.....	4	8	3+
15	.00214	.00521	.....	7	15	7+
16	.00463	.00562	.....	13	28	9+
17	.00650	.00607	.....	23	51	8+
18	.00558	.00656	.....	38	89	14+
19	.00768	.00708	.....	63	152	9+
20	.00842	.00720	.....	99	251	8−
21	.00751	.00749	.....	158	409	8−
22	.00654	.00731	.....	224	633	16+
23	.00743	.00704	.....	296	929	0

MORTALITY TABLE FOR THE THIRTY AMERICAN COMPANIES—*Continued.*

AGES.	Obsd. Rates.	Calcd. Rates.	Deaths by *bc*	Calcd. Deaths.	Sums of Cald. Ds.	Diffs. from obsd.
24	.00600	.00682	.....	371	1,300	45+
25	.00693	.00678	.....	458	1,758	35+
26	.00657	.00667	.....	538	2,296	43+
27	.00689	.00646	91.5	599	2,895	3+
28	.00712	.00654	114.6	697	3.592	58—
29	.00659	.00664	139 7	790	4,382	52—
30	.00631	.00675	166.5	877	5,259	6+
31	.00705	.00687	190.8	937	6,196	18—
32	.00680	.00700	219 9	1,008	7,204	11+
33	.00699	.00714	252.0	1,079	8,283	33+
34	.00789	.00729	286.2	1,147	9,430	87+
35	.00740	.00745	321.1	1,206	10,636	97+
36	.00737	.00764	358.2	1,262	11,898	141+
37	.00781	.00783	393.8	1,303	13.201	145+
38	.00845	.00805	428.9	1,337	14.538	79+
39	.00849	.00829	464 3	1,366	15.904	47+
40	.00862	.00854	500 2	1,389	17,293	35+
41	.00900	.00883	533 5	1,403	18,696	8+
42	.00920	.00913	558.2	1,391	20,087	2—
43	.00997	.00947	584.3	1,383	21,470	25—
44	.01034	.00983	610 4	1,375	22,845	146—
45	.00935	.01023	633.8	1,361	24,206	29—
46	.01060	.01067	656.8	1,348	25.554	20—
47	.01125	.01114	668.2	1,312	25,866	33—
48	.01168	.01166	678.7	1,277	28,143	136—
49	.01133	.01223	690.3	1,249	29 392	44—
50	.01255	.01285	700 7	1,220	30,612	16—
51	.01360	.01352	703.0	1,180	31,792	23—
52	01397	.01426	697.4	1,131	32,923	0
53	.01438	.01506	688 3	1,080	34.003	48+
54	.01530	.01594	676 2	1,029	35,032	89+
55	.01720	.01690	652.5	965	35.997	72+
56	.01746	.01794	626.0	900	36,897	96+
57	.01859	.01908	595 3	834	37.731	117+
58	.01981	.02033	567.1	777	38,508	138+
59	.02166	.02169	539.9	722	39.230	139+
60	.02537	.02317	511.5	669	39.899	75+
61	.02600	.02479	482.2	619	40.518	45+
62	.02506	.02655	446.8	563	41,081	77+
63	.02872	.02848	407.9	504	41.585	72+
64	.03113	.03059	368.7	449	42.034	64+
65	.03433	.03288	332.2	398	42.432	46+
66	.03781	.03539	291.2	344	42.776	22+
67	.03512	.03813	252.0	294	43.070	45+
68	.04288	.04111	215.4	248	43 318	34+
69	.04772	.04437	182.6	208	43.526	18+
70	.05257	.04793	152.7	172	43.698	1+
71	.04814	.05181	129.0	144	43.842	11+
72	.06331	.05605	108 7	120	43.962	5—
73	.05716	.06068	89 8	99	44.061	1+
74	.06549	.06572	73 6	80	44.141	1+
75	.06561	.07123	60.0	65	44.206	6+
76	.07555	.07704	50 4	54	44.260	7+
77	.09863	.08382	42 9	46	44.306	1—
78	.11463	.09098	35.1	37	44.343	11—
79	.09462	.09879	28 6	30	44.373	10—
80	.09052	.10733	23.6	25	44.398	6—
81	.10682	.11664	18 7	20	44.418	4—
82	.17647	.12681	14.4	15	44.433	12—
83	.08861	.13790	10.5	11	44.444	6—
84	.11765	.15002	8.6	9	44.453	4—
85	.12500	.16324	7 6	8	44 461	2—
86	.17241	.17765	5 0	5	44.460	2—
87	.19048	.19340	3 9	4	44.470	2—
88	.12121	.21059	3.4	4	44.474	0
89	.27273	.22934	2.5	3	44.477	0
90	.30769	.24981	1 6	2	44.479	0
91	0	.27215	1.1	1	44.480	1+
92	.25000	.29654	1.2	1	44.481	1+
93	.50000	.32316	.6	1	44.482	1+
94	0	.35220	.3	0	44.482	1+
95	1.00000	.38401	.4	0	44.482	0
Sum	.....	.....	20352.5	....	.....	....

NEWS OF THE WEEK.

Underwriters at Lake George.

THE Sagamore Hotel at Lake George was the scene last week of two gatherings of Empire State fire underwriters. The State Board of Supervising and Adjusting Insurance Agents held its sixteenth annual meeting on Tuesday, and elected officers as follows: President, J. M. Hodges of the Phenix, Brooklyn; vice-president, A. M. Burtis, Home, New York; secretary and treasurer, J. L. Kendig, Guardian, England; executive committee, C. L. Hedge, Firemans Fund, California; G. S. A. Young, Hartford Fire Insurance Company; M. Gallagher, Continental; J. Q. Straeffer, Phœnix; C. H. Wait, Sun, England; Mr. Selkirk, Commercial Union, England; Sidney Schofield, Dutchess County Insurance Company. Sidney E. Locke of Glens Falls, special agent of the Oriental Insurance Company of Hartford, was elected a new member.

On Wednesday the Underwriters of the State of New York held their regular monthly meeting and chose the following named officers to serve during the ensuing year: President, J. J. Babcock of Springfield; first vice-president, F. W. Jenness; second vice-president, J. L. Kendig; treasurer, L. S. Morgan; secretary, W. J. Fredrick.

Mutual Insurance in New Orleans.

A NEW mutual insurance company has been started in New Orleans, called the Propertyholders Mutual Fire Insurance Association. The first meeting of the board of directors was held December 5, 1887, and the organization completed. The officers are Gebhart Buesing, president; James H. Douglas, vice-president; John H. Wilberding, treasurer; J. H. Wendt, secretary. The following extract from its charter will show the plan upon which it proposes to do business: Insurance will be effected for five years, twenty per cent of the amount of the premium shall be paid cash, and for the balance the insured shall furnish his promissory note, payable on demand, to meet and cover his proportion of costs, charges and losses which may be assessed against him. The insured may at any time have his policy canceled and withdraw his premium note, or such part thereof as may be left after deduction of all costs and assessments thereon, provided that said note shall not be returned to him until after thirty days thereafter and until he has paid all assessments which may be levied thereon for losses incurred up to the date of the cancellation of the policy. Among its incorporators are a number of well-known citizens of New Orleans.

Life Insurance Premiums and Reserves.

THE actuaries are largely to blame for a popular misapprehension regarding life insurance premiums, which misapprehension has been eagerly taken advantage of by the horde of co-operatives that have been born in ignorance and have died in disgrace during the past ten years. It is that there is in a level premium something besides insurance and distinct from insurance. The unearned portion of the premium—for it is nothing else—has gone under the names "self-insurance," "savings bank deposit," "investment," etc., until it has come to be believed that life insurance companies are taking advantage of their customers to exact from them money that is not all necessary for the purpose of insurance. And now they have got to go to work and explain it away, and the necessity for this explanation appears to be the reason for the publication of a pamphlet of twelve pages by THE SPECTATOR Company. The author is Sheppard Homans, and he has explained very clearly the functions of both the level and the natural premiums, and illustrated by tables the fact that each is the exact equivalent of the other, and that one takes no more out of the collective body of policyholders than the other. Mr. Homans says:

"Level premiums are simply the commuted equivalents of the increasing or natural premiums. In both systems the company must alike be furnished with the cost of insuring the net amount at risk at the actual age attained on each and every policy in force. This cost is independent of the form of policy contract, the age at issue, or the scale of premium charged. This cost, as previously stated, may be furnished either by direct present payments, as by natural premiums, or partly by direct present payments, and partly drawing upon the investment reserve or accumulated deposits, a fund contributed by the policyholders for this express purpose."

And yet this statement may not be considered as entirely fair to Mr. Homans, because he has not yet released himself from the shackles of the self-insurance theory. He still clings feebly, it is true, to the artificial distinctions which have been set up between the present and the future risk which is paid for in the level premium, and still talks of yearly decreasing insurance and yearly increasing investment. The men who are insured in 1888 will have to pay for insurance either the net level premium until they are all dead, or they will have to pay the yearly increasing premium for the same term, and one will cost just as much as the other. There is as much self-insurance in the one case as there is in the other. An insurer has the choice of accepting an increasing burden in the natural premium, or a steady burden in the level premium. There need be no mystery about the matter. We start out with two roads before us, both leading to the same place. The one is a level road, and the other is all the way up hill. Or, to change the metaphor, both roads are level and both lead to the same place, but on the one you carry the same load all the way, and on the other you start lighter and at every step increase your load. When the end is reached you have carried the same load the same number of miles, whichever road you take. A single net premium of $367.57, at age forty, will insure the payment at death of $1000. An annual level premium of

$22.35 will achieve the same result. A premium of $9.42, gradually increasing to $59.61, at age seventy, will answer the same purpose. So far as the assured is concerned he is paying for insurance, and for nothing else, no matter which of the methods he may choose. Mr. Homans' pamphlet is a welcome contribution towards clearing the air of the fog which has been blown about life insurance by the actuaries, but it wants to go a little farther before the air will be entirely clear.—*Weekly Underwriter.*

"Life Insurance Premiums and Reserves," by Sheppard Homans, consulting actuary (published by THE SPECTATOR Company), is a well-written work which bears evidence of care and thoroughness. It contains a number of carefully-prepared and valuable tables. In closing Mr. Homans says: "There are only two sound systems of life insurance; the one by natural premiums, increasing each year as a man grows older; the other, by level premiums, which necessitate investments or accumulated payments largely in excess during the earlier years to meet the deficiencies of the uniform, unchanging premiums in later years. The attempts by so many co-operative or assessment companies to furnish insurance by assessments based upon the age of entry, and which rates do not increase with age must inevitably result in disappointment and disaster. Natural laws may not be violated with impunity."—*Commercial Bulletin.*

How Pitcher Was Caught.

THE arrest of the defaulter Pitcher is owing to the fact of his fidelity bond having been guaranteed by the Guarantee Company of North America, and to the prompt action taken by Edward Rawlings, the managing director of that company. The morning papers of June 26 published a telegraphic item from Providence to the effect that Pitcher had robbed the Union Bank and had absconded. Mr. Rawlings, upon seeing the paragraph, referred to the company's books, and found that the company had issued a bond in favor of the bank, guaranteeing the fidelity of Pitcher. Mr. Rawlings at once sent for Detective Kellert, and instructed him to act in the matter.

A comparison of the handwriting of the defaulter as contained in the application for the bond of the guarantee in the office of the company, with the signature "James A. Roberts" in the register of the hotel, written by the defaulter, convinced Mr. Rawlings that "James A. Roberts" was Charles A. Pitcher, the defaulting teller, and he at once authorized the arrest. Had the Guarantee Company not been interested in Pitcher, the chances are that he would have made good his escape from Canada with the plunder.

Immediately on learning that the defaulter had purchased exchange on Paris from the Hochelaga Bank, the company at once gave its cheque and secured the original bills in their wrappers, which had been stolen from the Union Bank, with which Pitcher purchased the exchange, only just in time to save them from being distributed, whereby all trace of identification would have been lost.—*Montreal Star, July* 11.

The Connecticut Indemnity Association of Waterbury.

THIS company, chartered by the State of Connecticut in 1887, has, with painstaking care, laid a foundation which is calculated to perpetuate it for all time. It is claimed that its rates for life policies, deduced from The American Experience Table of Mortality, are equitable and mathematically adjusted. The company issues an endowment, tontine, old age, benefit and accident conditions to its regular certificates, which secures either or all of the several forms of insurance mentioned. Actuaries Hon. Julius L. Clarke of Boston and Horatio J. Croad of New York were employed to furnish the rates adopted by the company, and therefore they are not a matter of guess-work. The system which the company controls is ingenious and indicates a thorough knowledge of the requirements of life insurance by its inventor. Bonds from the American Security Company are furnished by the officers of the company who have the handling of its funds, while the officers and directors are men of excellent repute and possess the confidence of the community in which they live. The company's business in its home State, to which it confined its operations until the early part of the present year, exceeded that of any company, whether home or foreign. This of itself speaks well for it, and shows the confidence reposed in it by the people of Connecticut. The rates charged never increase, but are decreased by dividends after the tenth year of insurance. The loading for expenses is reasonable and limited. The company's privileged capital under its charter is $250,000; its nominal capital is $200,000, of which over $100,000 has been paid in cash. The company has donated outright to policyholders, which is securely invested in first mortgage and other like valuable securities, the sum of $50,000 as a guarantee fund for the payment of policy claims. All the assets and property of the company is made liable for the payment of claims in full. The company has been admitted to some sixteen or more States since January 1, in which it is meeting with gratifying success, and there is little doubt that the close of '88 will show a very large increase of business over the previous year.

Lives Lost by Fire in 1887.

FROM The Chronicle Fire Tables we take the following giving the losses of human and animal life in the United States by fire last year compared with the figures of the preceding four years:

STATES AND TERRITORIES.	Human Beings.	Horses.	Cattle.	Other Animals.
Alabama	28	96	..	5
Arizona	2	..	..	..
Arkansas	13	6	1	50
California	19	146	6	..
Colorado	7	14	22	..
Connecticut	5	32	78	14
Dakota	12	63	29	..
Delaware	..	27	34	..
Florida	2	..	..	..
Georgia	14	55	5	17
Idaho	..	..	..	10
Illinois	122	144	74	75
Indiana	15	258	44	254
Iowa	3	75	25	20
Kansas	25	120	100	710
Kentucky	12	176	60	8
Louisiana	12	15	..	..
Maine	6	35	27	51
Maryland	2	43	19	1
Massachusetts	7	126	72	70
Michigan	59	79	107	109
Minnesota	4	46	4	20
Mississippi	8	18	..	..
Missouri	13	481	22	7
Montana	2	..	..	..
Nebraska	1	35	40	..
North Carolina	7	39	14	20
New Hampshire	3	19	41	133
New Jersey	6	161	104	77
New Mexico	..	2	..	..
New York	45	1,692	146	129
Ohio	44	267	339	503
Oregon	6	24	..	..
Pennsylvania	48	160	284	133
Rhode Island	..	11	30	..
South Carolina	7	1	..	..
Tennessee	11	76	2	1
Texas	9	23	6	500
Vermont	35	8	10	3
Virginia	8	64	14	80
Washington	8	..	..	..
West Virginia	1	23	..	12
Wisconsin	31	73	33	..
Totals, 1887	662	4,733	1,802	3,012
Totals, 1886	344	2,241	2,281	8,142
Totals, 1885	491	1,973	1,161	4,077
Totals, 1884	384	2,114	1,230	3,926
Totals, 1883	447	2,171	1,183	5,981

European Statistics.

THE latest volume of Consular reports issued by the State Department at Washington contains much valuable information contributed by Consul-General Thomas M. Waller of London. We extract the following:

The Registrar-General's report of the births, marriages and deaths in England and Wales for the year 1886, just published, commands in this country uncommon attention, because it discloses the fact that the marriage rate, which has been constantly decreasing for several years, is now less than it has been since 1838. The marriages registered in 1886 numbered 196,071, a rate of 14.1 persons in every 1000 of the population, a fall of 3.5 since 1873.

As it appears by a table following, the fluctuations in the marriage rate for several years is coincident with the fall in value per head of British exports and the average price of wheat. The other suggestive fact appearing in the vital statistics of this year more strongly than before is that the mean ages at marriage have been gradually rising since 1873, the present average age being 26.2 years for bachelors and 24.6 years for spinsters.

Notwithstanding this, under-age marriages are still very numerous. Eighty-one per cent of the bachelors and 23.6 per cent of the spinsters

married under twenty-one years of age, and 6.2 per cent of the total number married were minors.

In the newspaper discussions which these statistics have provoked it has been generally claimed that prudence, enforced by hard times, and not immorality, is the cause of the reduced marriage rate and the increased marriage age, and the marked diminution in the number of illegitimate births is cited in proof of this explanation.

The tendency of reform shown in the criminal returns of 1885, and to which especial attention was called in my last report, has strengthened during the year 1886. This fact is most striking in the record of summary proceedings, there having been 44,305, or about 6½ per cent less than in the year previous. The decrease of 18,082, or about ten per cent, in the number of arrests for drunkenness will be noticed with pleasure. This general improvement is equally maintained in the different divisions of the United Kingdom.

TOTAL POPULATION OF EACH DIVISION OF THE UNITED KINGDOM, ESTIMATED TO THE MIDDLE OF EACH YEAR (EXCLUSIVE OF THE ARMY, NAVY AND MERCHANT SEAMEN ABROAD).

DIVISION.	1887.	1886.
England and Wales	28,247,151	27,870,586
Scotland	3,991,499	3,949,393
Ireland	4,852,914	4,889,498
Total	37,091,564	36,709,477

POPULATION, MARRIAGES, BIRTHS AND DEATHS IN THE UNITED KINGDOM.

DIVISIONS.	Years.	NUMBERS.				PROPORTION PER 1,000 OF THE POPULATION.		
		Estimated Population.	Persons Married.	Births.*	Deaths.*	Persons Married.	Births.*	Deaths.*
United Kingdom	1885	36,331,119	488,356	1,136,331	688,065	13.4	31.3	18.9
	1886	36,709,477	482,268	1,150,720	698,190	13.1	31.3	19.0
England and Wales	1885	27,499,041	395,490	894,270	522,750	14.4	32.5	19.0
	1886	27,870,586	392,142	903,866	537,276	14.1	32 4	19.3
Scotland	1885	3,907,736	50,512	126,110	74,603	12.9	32.3	19.1
	1886	3,949,393	48,938	127,927	73,622	12.4	32.4	18.6
Ireland	1885	4,924,342	42,754	115 951	90,712	8.6	33.5	18.4
	1886	4,889,498	41,188	113 927	87,292	8.4	23.3	17.9

* Exclusive of still-born.

PERSONS MARRIED, BIRTHS AND DEATHS PER 1000 OF THE POPULATION IN THE UNITED KINGDOM AND IN OTHER EUROPEAN COUNTRIES.

YEARS.	United Kingdom.	England and Wales.	Scotland.	Ireland.	Denmark.	Norway.	Sweden.	Austria.
Persons Married to 1000 Living.								
1880	13.6	14.9	13.2	7.8	15.2	13 3	12.6	15 2
1881	14.0	15.1	13.9	8.5	15.6	12.8	12.4	16.0
1882	14.3	15.5	14 1	8.6	15.4	13 4	12.7	16.4
1883	14.3	15.4	14 0	8.5	15 4	13 2	12.8	15.7
1884	14.1	15.0	13.5	9.1	15.6	13.7	13.1	15 7
1885	13.4	14.4	12.9	8 6	15 1	13.3	13.3	15 2
1886	13 1	14.1	12.4	8.4	14.2	13.1	.. .	15.5
Births to 1000 Living.								
1880	32.7	34.2	33.6	24 7	31 8	30.7	29 4	38.7
1881	32.5	33 9	33.7	24.5	32.3	30.0	29 1	38.7
1882	32.2	33.7	33.3	24.1	32.4	30.9	29 4	38.9
1883	31.8	33.3	32 5	23.6	31.8	30 9	28.9	38.2
1884	32 1	33.3	33.4	24.0	33.4	31.0	30.0	38.4
1885	31.3	32.5	32.3	23.5	32.6	31.3	29.6	37.4
1886	31.3	32.4	32 4	23.3	32.6	30.9	....	37.7
Deaths to 1000 Living.								
1880	20 4	20.5	20.5	19.8	20 4	15 9	18.1	29 7
1881	18.7	18.9	19.3	17.5	18.3	16.8	17.7	30.6
1882	19.2	19 6	19 3	17.4	19.3	18.4	17.4	30 8
1883	19.3	19.5	20.1	19.2	18.4	17.1	17.3	30.1
1884	19.3	19.5	19.4	17.6	18.4	16 4	17.5	29.2
1885	18.9	19.0	19.1	18.4	17.9	16.5	17.8	29.9
1886	19.0	19.3	18.6	17.9	18.2	16.1	....	29.2

YEARS.	Hungary.	Switzerland.	German Empire.	Prussia.	Netherlands.	Belgium.	France.	Italy.
Persons Married to 1000 Living.								
1880	18.2	13 7	15 0	15 3	15.0	14.1	14.9	13.8
1881	19.8	13.6	14.9	15.2	14.6	14.1	15.0	16.2
1882	20.3	13.5	15.3	15.7	14.3	13.9	14.8	15.7
1883	20.5	13.6	15.3	15.8	14.2	13.5	15 0	16.0
1884	20.1	13.6	15.7	16.1	14.4	13.5	15.3	16.4
1885	....	13.8	15.8	16.3	12.2	13.6	14.9	15 8
1886	....	13.7	15.8	16.2	13 9	13.4	14.8	15 6
Births to 1000 Living.								
1880	42.5	29 6	37.6	37.7	35.5	31.1	24.5	33.6
1881	43.7	29.8	37.0	36.8	35.0	31.4	24 9	38.0
1882	44.6	28.8	37.2	37.4	35.3	31.2	24 8	37.1
1883	45 3	26.4	36.6	36.9	34.3	30.5	24.8	37.1
1884	46.0	28.1	37.2	37.4	34 9	30.5	24.8	38.7
1885	....	27.5	37.0	37.6	34.4	29.9	24.3	38.1
1886	....	27.5	37.1	37.7	34.6	29.6	23.9	36 5
Deaths to 1000 Living.								
1880	38.6	21.9	26.0	25.4	23 5	22 3	22 8	30.5
1881	35.6	22.4	25.5	24.8	21 5	20 9	22.0	27.6
1882	36.6	21.9	25.7	25.3	20.7	20.2	22.2	27.5
1883	32.6	20.3	25.9	25.5	21.8	20.8	22.2	27.5
1884	31.4	20.1	26.0	25.5	22.2	20.9	22.2	26.7
1885	....	21.0	25.7	25 7	21.0	20.1	22.0	26.6
1886	....	20.4	26.0	26.0	21.8	21 1	22 5	28.3

AVERAGE AGES AT MARRIAGE OF BACHELORS AND SPINSTERS, IN OCCUPATIONAL GROUPS, 1884–1885.

OCCUPATIONS.	Bachelors.	Spinsters.	Difference Between the Ages of Husband and Wife.
Miners	24.06	22.46	—1.60
Textile hands	24.38	23.43	—0.95
Shoemakers, tailors, etc	24.92	24.31	—0.61
Artisans	25.35	23 70	—1.65
Laborers	25.56	23.66	—1 90
Commercial clerks	26.25	24.43	—1 82
Shop-keepers, shop-men	26.67	24.22	—2.45
Farmers and sons	29.23	26 91	—2.32
Professional and independent	31.22	26.40	—4.82

MORTALITY FROM THE SEVERAL CLASSES OF DISEASES, 1886.

CAUSES OF DEATH.	Total Deaths in 1886.	RATE PER MILLION LIVING.						
		1886.	1885.	1884.	1883.	1882.	1881.	Mean, 1871–1880.
Zymotic diseases	73,747	2,648	2,507	3,094	2,639	3,088	2,660	3,724
Parasitic diseases	990	35	30	38	39	37	39	57
Dietetic diseases	1,656	59	59	58	66	68	66	63
Constitutional diseases	92,751	3,330	3,276	3,404	3,407	3,395	3,328	3,594
Developmental diseases	45,103	1,618	1,598	1,574	1,632	1,558	1,582	1,674
Local diseases	276,302	9,915	9,908	9,543	9,890	9,591	9 348	9,920
Violence	17,444	626	625	651	675	669	697	736
Ill-defined and not specified causes	29,283	1,047	1,007	1,149	1,188	1,154	1,160	1 610
All causes	537,276	19,278	19,010	19,511	19,536	19,560	18,880	21,378

NUMBER OF EMIGRANTS TO COUNTRIES OUT OF EUROPE.

DESTINATION.	1886.	1885.
British origin:		
Australia and New Zealand	43,076	39,395
British North America	24,745	19,838
United States	152,710	137,687
Other places	12,369	10,724
Total	232,900	207,644
Foreign origin:		
Not stated	97,901	56,741
Total emigrants	330,801	264,385

NUMBER OF IMMIGRANTS OF BRITISH AND FOREIGN NATIONALITY THAT ENTERED THE UNITED KINGDOM FROM COUNTRIES OUT OF EUROPE.

YEAR.	British and Irish.	Foreigners.	Not Distinguish'd	Total.
1885.....	85,468	27,006	1,075	113,549
1886.....	80,018	28,474	387	108,879

MEAN RELATIVE HUMIDITY OF THE ATMOSPHERE FOR EACH MONTH OF THE YEAR ENDING SEPTEMBER, 1887.

[Royal Observatory, Greenwich. W. H. M. Christie, Esq., M. A., F. R. S., Astronomer Royal.]

MONTH.	Mean Relative Humidity.*	MONTH.	Mean Relative Humidity.*
1886.		1887.	
October.....	86	March.....	81
November.....	89	April.....	75
December.....	86	May.....	80
1887.		June.....	72
January.....	90	July.....	64
February.....	82	August.....	67
		September.....	80

* Complete saturation = 100.

AVERAGE STRENGTH OF THE BRITISH ARMY AND NAVY.

YEAR.	ARMY.			NAVY.		
	At Home.	Abroad.	Total.	Seamen.	Marines.	Total.
1885.....	92,579	106,485	198,064	48,600	12,900	61,500
1886.....	98,057	105,748	203,805	48,361	13,037	61,398

EFFECTIVE STRENGTH OF THE ARMY RESERVE, MILITIA AND YEOMANRY, AND NUMBER OF VOLUNTEERS ENROLLED.

CLASS.	1885.	1886.
Army reserve.....	47,024	48,712
Militia and military reserve.....	119,356	122,428
Yeomanry.....	11,590	11,499
Volunteers.....	224,012	226,752
Total.....	401,982	409 391

How to Prevent a Cold.

UNDER this title Dr. Brown-Sequard makes a contribution to The Societé de Biologe which will be read with interest. Everybody catches cold more or less often, and nobody wishes to do so; hence Brown-Sequard's "method" ought to be popular. Under the name of a "cold" are included a number of acute catarrhal inflammations affecting the nasal, pharyngeal, laryngeal, tracheal, or bronchial mucous membrane. In this country we even apply the term to acute affections of the middle ear, the eye, the stomach, intestines, or bladder. The cause of these so-called "colds" is the influence of cold, damp air upon sensitive portions of the body, producing thereby a disturbance of the vascular equilibrium. The result is a congestion which settles down, perhaps with the help of microbes, as the late Dr. Austin Flint believed into an inflammation.

The most sensitive parts of the skin, according to Dr. Brown-Sequard, the catarrhal genetic areas, are the neck and the feet. In order to prevent "colds," therefore, one has only to harden these areas and destroy their sensitiveness. This is done by daily blowing a stream of cool air by means of an elastic bag, upon the neck, and by immersing the feet in cool water. The air is at first only slightly cool, but is each day made colder, until the neck can stand an Arctic blast with impunity. The feet are immersed in water which is at first at a temperature of about 90° Fah., and this is gradually reduced to 38° Fah.

Dr. Brown-Sequard's method is only a more rigid and elaborate form of a very well-known practice, viz., that of daily bathing in cool water. It will, no doubt, be useful if the person is not aged or weak. Such methods, however, seem after a time to lose their efficacy.—*Medical Record.*

MERE MENTION.

—Water-works will be built at Anita, Ia.

—North Easton, Mass., is organizing a fire department.

—A fire department has been incorporated at Islip, L. I.

—There were fifteen fires in San Francisco July 4; mostly trifling.

—A system of water-works will be constructed at Gladwin, Mich.

—The Louisville (Ky.) salvage corps expect to be in operation August 1.

—The Grange State Mutual Fire of New Hampshire will shortly begin business.

—The capital stock of the New Hampshire Fire has been raised to $600,000.

—The city of Staunton, Va., is moving in the direction of a paid fire department.

—John Karel, formerly with the Hekla of Madison, has resigned on account of ill health.

—Edgar S. Wilson, secretary of the Macon Fire of Macon, Ga., was in New York this week.

—Wm. Reed of Chicago, formerly adjuster for fire companies, has become an "adjuster for the assured."

—The damage done by the recent floods in the Monongahela river last week is estimated at over $3,000,000.

—John Templeton succeeds C. H. Bell as president of the Exeter (N. H.) Mutual Fire Insurance Company.

—The Boston local agents have now, without exception, obtained certificates from the Board of Underwriters.

—Gustave Touchard, president of the Union Insurance Company of San Francisco, died in that city July 11.

—The bill in the Louisiana legislature establishing a State insurance department has been unfavorably reported.

—W. P. Rost, has been appointed special agent for the Niagara Fire for Ohio and West Virginia, with headquarters at Dayton, O.

—Four persons were suffocated July 6 in a burning farm house about seven miles from Sault Ste. Marie, Mich., on the Canadian side.

—Henry B. Hyde, president of the Equitable Life Assurance Society, was booked for passage for Europe on a steamer sailing July 18.

—The Continental Insurance Company in its semi-annual statement exhibits cash assets of $4,880,751, and a net surplus of $1,012,904.

—At a meeting of the directors of the Fire Association of New York last Friday, O. R. Meyer of Bavir, Meyer & Co., was elected vice-president.

—F. H. Way has been appointed secretary of the Williamsburgh City Insurance Company, in place of N. W. Meserole, who had resigned the office.

—THE SPECTATOR is indebted to Auditor Chas. P. Swigert of Illinois for a bound copy of Part II. of his report for 1887, covering insurance other than fire.

—The water supply at Leavenworth, Kan., is complained of as impure, and the Board of Health has recommended the adoption of the Hyatt filtering system.

—The Dominion Life Assurance Company of Waterloo, Ont., is the latest competitor in the Canadian life assurance field. It will have a capital of $250,000.

—A fire at Suisun, Cal., July 9, caused a total loss of $400,000, with insurance of only $150,000. Eight blocks, comprising seven-eighths of the town, were destroyed.

—Omaha man—"Think Mountain county is going to be a rich section some day, eh? How is the water—or perhaps you didn't test it?" Colonel

Kaintuck—"Oh, yes, we did; chucked a hatful onto a fire and it worked first-rate."—*Omaha World.*

—S. S. Frowe, formerly adjuster for the Commercial Union's Western department, has become assistant resident secretary, H. C. Eddy being resident secretary, at Chicago.

—The newly elected officers of the Peoples Insurance Company of Middletown, Conn., are: President, S. H. Butler; vice-president, A. G. Butler; secretary, H. C. Ward.

—The members of the second and third battalions of the Cleveland (O.) Fire Department will be furnished with pompier apparatus and instructed in the life saving drill.

—Thomas S. Chard, Chicago manager of the Firemans Fund of California, has our thanks for a very tastefully bound and printed little volume of his entitled, California Sketches.

—Rates have been readjusted at Waterville, N. Y., a considerable reduction having been made in many instances, a move made possible by the introduction of a water-works system.

—During the second quarter of the present year there were 782 fires in New York city, and during the first six months there were 313 more fires than during the same period of 1887.

—The Provident Fund Society of New York city, of which A. N. Lockwood is president, has just undergone a satisfactory examination by Insurance Commissioner O. R. Fyler of Connecticut.

—The National Fire of Hartford, through its general agents at Chicago, Fred. S. James & Co., has issued a very useful pamphlet entitled "Facts and figures relating to the presidential campaign of '88."

—Eighty mules were burned to death and four men were badly injured, two of them fatally, in the street car stables at Wichita, Kan., July 11. The building was destroyed. Incendiarism is suspected.

—About 200 houses and a large quantity of lumber were destroyed by fire at Alpena, Mich., on Thursday last. Some 1300 persons are reported homeless. The losses are estimated at $400,000.

—At New Orleans during the month of June, there were twelve actual fires. The estimated loss is $39 520. One fire was caused by a lamp explosion; the origin of the remaining eleven was not learned.

—The New York Life Insurance Company has purchased ground at Minneapolis, Minn., 330 by 99 feet, at Fifth street and First and Second avenues, and will build a magnificent fireproof ten-story building.

—We are indebted to the publisher, J. H. C. Whiting, for a copy of The Philadelphia Insurance Chart for 1888. It is replete with information of value to underwriters. The handy form remains unchanged.

—The Standard's compilation of the fire losses in the United States, reported last week, gives an aggregate of $2,536,000, a total since January 1 of $61,688,000. This would make the rate for the year $116,062.335.

—Ellis Lang, the Mobile incendiary, has been convicted and sentenced to eighteen years imprisonment. This is the first conviction for arson in that city for over fifteen years, although there have been numerous trials.

—Wide-Awake for July contains the usual quantity of excellently illustrated matter for the entertainment of the juvenile mind. A most interesting article is that of Harriet Taylor Upton, The Children of James Monroe.

—Frith & Zollars, general agents of Denver, Col., announce that they have made arrangements with W. A. McGreer, late of Ottumwa, Ia., to act as their special agent in Colorado, Nebraska, New Mexico and Wyoming.

—Jane McEleney of Somerville, Mass., pleaded guilty to arson last week. Her furniture was insured for $500 in the Sun Fire Office. She removed most of it, fired the remainder and tried to collect the face of the policy.

—The time for the presentation of claims against the Continental Life has been extended to January 1 next. The total amount of stock notes held by the receivers is $170,000. A small amount, not exceeding $10,000, has been paid.

—During the first twenty-six weeks of 1888 the Mutual Life paid 1438 claims that became due by the death of the assured. The total amount paid thereon was $3,676,883.62. The average amount of each policy paid was over $2500, or, to be exact, $2,556.95. On the average, the insurance under these 1438 policies was carried fifteen years and six months, and up to the average age of fifty-eight, for which the company received from the assured only $1,429,989.66, showing a clear profit to the estates of the deceased amounting to $2,246,893.96.—*Weekly Statement.*

—We are very sorry to hear that J. C. Bergstresser of The Insurance World isn't well, and has run up to the Straits of Mackinaw to recuperate. There should be no trouble about that; we don't think natural gas has been struck there yet.

—June fires in New Hampshire, according to F. C. Livingston of Manchester, numbered twenty-two and caused a loss of $46,155. The total insurance paid was $12,455. Last year in June seven fires gave a loss of $41,077; insurance paid, $17,027.

—The executive committee of the board of directors of the Fidelity and Casualty Company has selected the present assistant secretary, Robert J. Hillas, to succeed Mr. Crane as secretary. The appointment will be approved at the next meeting of the board.

—A circular from President Philip Cheek, Jr., Insurance Commissioner of Wisconsin, and Secretary J. A. McEwen, announces that the next session of the National Insurance Commissioners Convention of the United States will be held at Madison, Wis., August 15.

—Thirty-three valuable trotting horses were burned in the training stable of William Rice at Danville, Va., on Tuesday week. The losses amount to $70,000. On the following morning two men and forty horses lost their lives in a livery stable at Buffalo, N. Y.

—We acknowledge receipt from Insurance Commissioner Henry S. Raymond of Michigan of a bound copy of the second part of his report, covering life insurance. We have already printed extracts from an advance copy kindly furnished us by Mr. Raymond.

—By a bill which recently passed both houses of Parliament, the coroner of the city of London is empowered to hold inquests into the origin of all fires, even where no lives have been lost. The jury may return a verdict of arson, which will have the full force of an indictment.

—Earl & Wilson, the collar and cuff manufacturers of The Century building, made claim for damages by the recent fire of $50,000. The companies offered to take the damaged stock at cost, and a compromise was finally arrived at, the companies paying between $6000 and $7000.

—In the Sheppard life assurance case at Macon, Ga., particulars of which were given in THE SPECTATOR of last week, the jury gave a verdict for the plaintiff for the full amount of the policy, with interest, damages, etc., amounting to $7500. It is thought that the case will be appealed.

—The business portion of the little manufacturing town of Avon, Mass., was burned July 14, the losses aggregating $200,000. The fire department was not large enough to cope with the flames, and before the apparatus from other towns could arrive the centre of the village was in ashes.

—Old Mr. Bently (reading)—"Here's an account of a building that fell down, and everyone in it was taken out alive." Old Mrs. Bently (knitting)—"Oh, my, how dreadful! Everyone taken out alive! Dear, dear!" Old Mr. Bently (looking sharply over his spectacles)—"Huh?"—*Epoch.*

—It is announced that the cash guarantee fund of the Mutual Fire Insurance Company of Newport, Ky., having been taken up, the company has been organized, and will begin writing policies early next month. The company is said to be backed by many prominent Cincinnati business men.

—The Standard says that the order to put fire alarm boxes in the public schoolhouses in Boston has been virtually shelved by the Board of Aldermen, and is in danger of dying of neglect. According to the same authority, a recent fire has shown the water supply of Fairhaven, Mass., to be very defective.

—While 300 or 400 persons, who had gathered to witness the contests of the Yalabasha Fire Association, were seated on the grand stand of the County Fair Association at Water Valley, Miss., July 4, the structure collapsed. About fifty persons were injured, of whom several would, it was expected, die of their hurts.

—An Indianapolis, Ind., paper says: "One of the prominent architects of this city made the statement a few days ago that, at last, the idea of making provisions for proper fire protection in business and other large buildings, is being adopted by most of the architects, and will result in making that important addition to plans one of the most valuable made for several years. In most instances the elevators are protected by

sliding iron doors, shutting off each floor as the elevator ascends or descends, and leaving all floors completely shut off at this point when the building is closed at nights or Sundays."

—A meeting was held at Louisville, Ky., July 11, of the field men of the "Union" companies operating in Kentucky and Tennessee, and the Kentucky and Tennessee League was organized. The officers elected were: President, A. P. Langhan; vice-president, H. W. Hart; secretary, A. P. Durgan; treasurer, C. B. Rogers.

—Odds Against Her, by Margaret Russell Macfarlane; The Silent Witness, by Mrs. J. H. Walworth; and Bewitched, by Louis Pendleton, are among the latest issues in the Sunshine and Rainbow series, published by Cassell & Co. These novels are of handy form and printed on good paper, in large, clear type, refreshing to the eye.

—Canadian underwriters have decided to withdraw from Hull, Ont., and will take no further risks there after existing policies expire. The place has been nearly wiped out by fire three times within six years, but despite these warnings, after the recent destructive conflagration there the citizens at once began to replace the burned structures with wooden buildings.

—A press telegram from Carlisle, Pa., says: "Dr. M. C. Smith, a prominent physician of this city; Abram Marquart, a justice of the peace of Newville, and Andrew J. Stone of the same place, who are charged with perjury, fraud and conspiracy to defraud the Old Peoples Mutual Benefit Society of Elkhart, Ind., were arrested at their homes last night."

—The annual meeting of the Fire Underwriters Association of the Northwest will be held at the Grand Pacific Hotel, Chicago, September 12 and 13. The meeting promises to be a particularly interesting one, and the attendance large. By addressing President I. W. Holman at 177 La Salle street, Chicago, visitors may have rooms engaged at any of the leading hotels at reduced rates.

—The Home Insurance Company's semi-annual statement shows cash assets of $8,084,147, a reserve premium fund of $3,432,045 and a net surplus of $1,203,831. A dividend of five per cent is declared. This is a most satisfactory exhibit, and shows that the energetic, conservative and safe management which has marked the career of this reliable company in the past continues unchanged.

—The Boston agencies of the Buffalo German, Franklin and Standard fire insurance companies have been transferred from James Swords to George H. Binney. Mr. Binney in addition will continue to represent the Michigan Fire and Marine, Milwaukee Mechanics, Grand Rapids and Commonwealth. The Milwaukee Mechanics' statement of July 1 gives assets of $655,088 and a net surplus of $117,266. Mr. Swords has accepted a position in Mr. Binney's office.

—The Insurance Journalists Association, at its meeting at Manhattan Beach last Thursday, adopted the following resolution: "*Resolved*, That this association recognizes with gratification the progress now being made on the part of the companies in the effort to abolish the pernicious system of rebate in life assurance, which has been so earnestly advocated by this association; and the association heartily appreciates the action of its executive committee in lending its aid to inaugurate this movement."

—Heber C. H., Utah, would not seem to offer many very desirable risks for the insurance companies. In answer to an inquiry as to the fire protection of the place, one of the local business men writes us that the roofs are all shingle, that there is no fire department, and that the place is supplied with water by small streams from the mountains, running through the town. He adds that the only means of learning of a fire are the "screeches" of the women, and the only means of fire extinguishment "old ladies and water buckets." This is, really, very sad.

—We have received from the publishers, Brown & Janvier, a copy of the Southern Insurance Directory for 1888, being the second annual issue of this volume. It contains a mass of information relative to insurance affairs in the thirteen Southern States, each State being arranged by itself. The information, given under appropriate headings, includes a description of the means of fire protection in each place in the State, a list of agents, and some other information that will be found desirable. Under the heading of "The Local Agents' Vade Mecum" is compiled a mass of information for the use of local agents, descriptive of the technology of the insurance business. The work concludes with a tabular exhibit of receipts and losses of 144 companies for five years in thirteen Southern States. We can scarcely commend the enterprise of the publishers in having taken bodily the chart issued by The Insurance World and inserted it, using the same type, in a work so pretentious as the directory. Since the publication of the charts in the earlier part of the year there has been an abundance of time to supply some of the omissions that were unavoidable when the chart was first produced. The difference in the style of type used in the chart from that in which the body of the directory is printed gives the work something of an incongruous appearance; however, this is something that may be excused on the score of economy. The book will undoubtedly prove useful to underwriters interested in the special business of the Southern field. It is very neatly bound, making a volume of some 400 pages.

—The tornado business opened early this year. While wind storms have not been quite so numerous as during the spring months of some other years, their severity is a reminder that fire insurance agents should keep their customers well supplied with "tornado insurance." Early last month the wind indulged in some playful antics at Winslow Siding near Wanatah, Ind., and blew away a lot of empty cars standing on the track at that place. At Freeport, Ill., it indulged in more viciousness and destroyed several buildings, among them an ice-house, malt-house, several dwellings and barns, reminding everybody in that vicinity that the German of Freeport insures against loss or damage by tornadoes. The same storm must have skipped most of Illinois in its way and swooped down upon Pecatonica, Ill., scattering buildings right and left as it visited this locality.—*Rough Notes.*

—The Co-operative Life and Accident Association must not be regarded as a sinner above all others, simply because it has had to pay the penalty of its sins sooner than others have. It has lots of companions in sin, and it will have lots of companions in misery. We should not want to bet that the Security Mutual Benefit Society of New York will not follow it on the downward road very speedily. With $302.85 of tangible assets, it has $46,000 of losses accrued, while one may be pardoned, under the circumstances, for not taking much stock in the fact that it disputes $30,000 of these. It is not a new thing for a debtor to seek time by disputing a bill. Even if the dispute is honest, it simply renders the society $30,000 less badly off than if it is dishonest; and that can't count for much in an association that has been in business six years, and has had ability to accumulate only $302.85 of assets, while it has been accumulating $11,180,000 of "insurance" in force.—*The Guardian.*

—The trustees of the Mutual Fire met last Thursday, when all except Aaron Carter resigned. New trustees were then elected as follows: P. B. Armstrong, O. R. Meyer of Bavier, Meyer & Co., A. F. Froescher, treasurer Brunswick-Balke-Collender Company; C. S. Braisted, secretary Eagle Pencil Company; Wm. Eggert of Wm. Eggert & Co, Otto Von Hein of Horstman, Von Hein & Co., Edward Barr of the Edward Barr Company (Limited), R. A. Loewenthal of Loewenthal & Morgenstern, Joseph Fox, president Columbia Bank; J. W. Mack of the Nathan Manufacturing Company, J. H. Loewenstein of J. H. Loewenstein & Bro., W. E. Lowe, John Dickson of the Holbrook Manufacturing Company, Emil Calman of E. Calman & Co., Judge Samson Lachman, Nathan D. Bill of Springfield, Mass.; General Edward Jordan, president King's County Elevated Railroad Company, and David Colman of Stine & Colman. The following officers were then elected: P. B. Armstrong, president; O. R. Meyer, vice-president; J. C. Hatie, secretary.

AGENCY APPOINTMENTS.

—D. D. Atwood, agent of the Royal, at Stoughton, Mass.

—J. B. King, agent of the Manhattan Life, at Springfield, Mass.

—P. E. Eddy, agent of the Standard Life and Accident, at Boston.

—E. L. Sanborn, agent of the Manhattan Life, at Worcester, Mass.

—George R. De Saussure, agent of the Washington Life, at Atlanta, Ga.

—Dunham & Trafford, agents of the Equitable Life, at Fall River, Mass.

—Hart Brothers, agents of the London and Lancashire, at Nashville, Tenn.

—A. Coolidge, agent of the United Firemens of Philadelphia, at Athol, Mass.

—James Glazebrook, superintendent of the Metropolitan Life, at Louisville, Ky.

—T. C. Timberlake, second agent of the London and Lancashire, at Louisville, Ky.

—L. W. Puffer, agent of the London and Lancashire, at Brockton, Mass., succeeding W. M. Thompson.